1. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 1^-} \frac{7}{(x+1)^8} + 9$$

A. ∞

B. $-\infty$

C. $f(1)$

D. The limit does not exist

E. None of the above

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2. Evaluate the limit below, if possible.

$$\lim_{x \to 7} \frac{\sqrt{9x - 38} - 5}{2x - 14}$$

A. 0.450

B. 0.100

C. 0.050

D. ∞

E. None of the above

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3. Based on the information below, which of the following statements is always true?

$$f(x) \textit{ approaches } 5.689 \textit{ as } x \textit{ approaches } \infty.$$

A. $f(x)$ is close to or exactly ∞ when x is large enough.

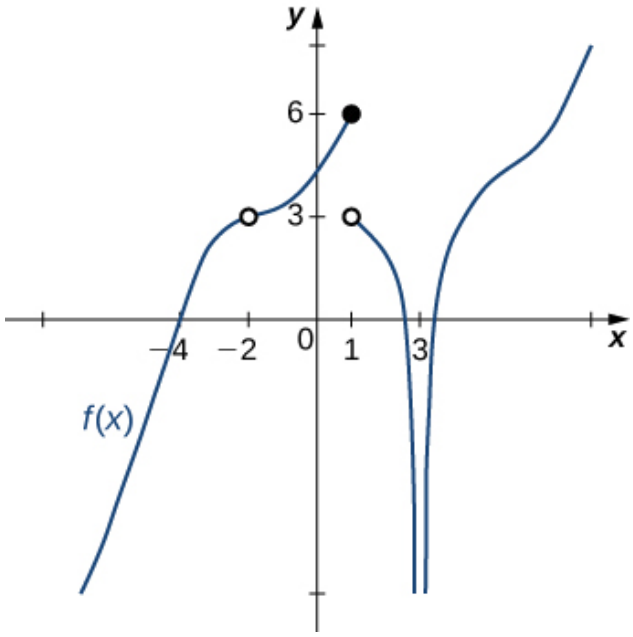
B. x is undefined when $f(x)$ is large enough.

C. $f(x)$ is undefined when x is large enough.

D. $f(x)$ is close to or exactly 5.689 when x is large enough.

E. None of the above are always true.

4. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = 3$.



A. -2

B. 1

C. $-\infty$

D. Multiple a make the statement true.

E. No a make the statement true.

5. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 8^-} \frac{-8}{(x-8)^3} + 5$$

A. $-\infty$

B. ∞

C. $f(8)$

D. The limit does not exist

E. None of the above

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6. To estimate the one-sided limit of the function below as x approaches 9 from the right, which of the following sets of numbers should you use?

$$\frac{\frac{9}{x} - 1}{x - 9}$$

A. $\{8.9000, 8.9900, 8.9990, 8.9999\}$

B. $\{8.9000, 8.9900, 9.0100, 9.1000\}$

C. $\{9.0000, 9.1000, 9.0100, 9.0010\}$

D. $\{9.0000, 8.9000, 8.9900, 8.9990\}$

E. $\{9.1000, 9.0100, 9.0010, 9.0001\}$

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7. Evaluate the limit below, if possible.

$$\lim_{x \to 7} \frac{\sqrt{5x - 10} - 5}{4x - 28}$$

A. 0.559

B. 0.025

C. 0.100

D. ∞

E. None of the above

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8. Based on the information below, which of the following statements is always true?

$$f(x) \textit{ approaches } 8.878 \textit{ as } x \textit{ approaches } 0.$$

A. $f(x)$ is close to or exactly 8.878 when x is close to 0

B. $f(x)$ is close to or exactly 0 when x is close to 8.878

C. $f(x) = 0$ when x is close to 8.878

D. $f(x) = 8.878$ when x is close to 0

E. None of the above are always true.

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9. To estimate the one-sided limit of the function below as x approaches 3 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{3}{x} - 1}{x - 3}$$

A. $\{2.9000, 2.9900, 3.0100, 3.1000\}$

B. $\{3.0000, 3.1000, 3.0100, 3.0010\}$

C. $\{2.9000, 2.9900, 2.9990, 2.9999\}$

D. $\{3.0000, 2.9000, 2.9900, 2.9990\}$

E. $\{3.1000, 3.0100, 3.0010, 3.0001\}$

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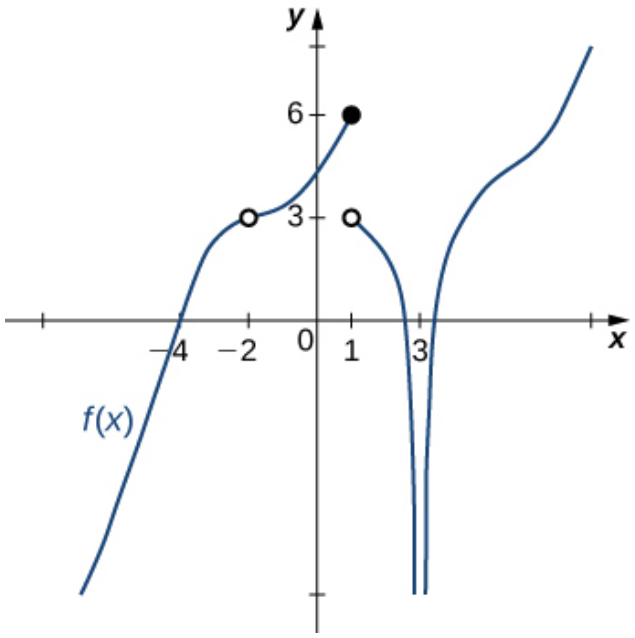
10. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x)$ does not exist.



A. -2

B. 3

C. 1

D. Multiple a make the statement true.

E. No a make the statement true.
